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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/482,060

01/13/00

WIECZOREK

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051252-5029

009629

QM02/0509

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WASHINGTON DC 20036-5869

EXAMINER

KIM, C

ART UNIT

PAPER NUMBER

3752

DATE MAILED:

05/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

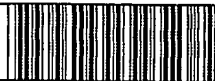
# Office Action Summary

Application No.  
09/482,060

Applicant(s)  
Wleczorek et al.

Examiner  
Christopher S. Kim

Art Unit  
3752



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on 2 Mar 2001

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1-9 and 16-23 is/are rejected.

7) ☒ Claim(s) 10-15 is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendment filed March 2, 2001 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Drawings***

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “at least one slot extending tangentially from the at least one fuel passage opening to the central aperture” recited in claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-9 and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wieczorek in view of Daly et al. and Munezane et al.

With respect to claims 1, 3-9, and 16-18, Wieczorek discloses a fuel injector (also see Hensley, US Patent 4,610,080 per Wieczorek column 1, lines 61-62) comprising: a body 24 (4,610,080); an armature 26 (4,610,080); a cylindrical needle 12; a seat 14; a first surface 22, a second surface (external bottom of seat member 14), and a cut-out configuration 34. Wieczorek

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discloses a guide member 26 but does not disclose a swirl generator. Additionally, the seat of Wieczorek does not protrude from the outlet portion of the body.

Daly et al. disclose a swirl generator 18 which also functions as a guide member. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have replaced the guide member of Wieczorek with the swirl generator/guide member of Daly et al. to increase the divergence of the column of fuel.

Munezane et al. discloses, in figure 4, a seat 11 protruding from the outlet portion of the body 9. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have assembled the seat of Wieczorek to the body as taught by Munezane et al. to reduce the number of parts.

With respect to claims 20 and 23, the limitations of the method of stabilizing temperature of a fuel injector are inherently met by operating the device of Wieczorek in view of Daly et al.

With respect to claims 2, 19, and 22, Wieczorek in view of Daly et al. and Munezane et al. discloses the limitations of the claimed invention with the exception of the range of the inner and outer diameter of the cylindrical annulus. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have made the inner diameter of the cylindrical annulus no more than 50% greater than the diameter of the cylindrical needle and the outer diameter of the cylindrical annulus no less than 100% greater than the inner diameter of the cylindrical annulus, since it has been held that where the general conditions of a claim are

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disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. 8 *In re Aller*, 105 USPQ 233.

With respect to claim 21, Wieczorek in view of Daly et al. and Munezane et al. discloses the limitations of the claimed invention with the exception of the body passage cross sectional area being less than 2.25 times the needle cross sectional area. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have made the body passage cross sectional area less than 2.25 times the needle cross sectional area, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. 8 *In re Aller*, 105 USPQ 233.

#### ***Allowable Subject Matter***

5. Claims 10-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-9 and 16-23 have been considered but are moot in view of the new ground(s) of rejection.

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*Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

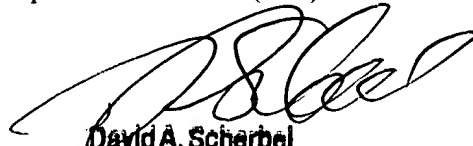
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday-Thursday from 6:30 a.m. to 5:00 p.m.

The fax phone number for this Group is (703) 308-7766.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

CK

April 23, 2001

  
David A. Scherbel  
Supervisory Patent Examiner  
Group 3700